ORDER NO. HAD8803105C8

Service Manual

Turntable System

SL-J110R

DC Servo
Automatic Turntable System

Color

(K).....Black Type

Area

Color	Areas
(K)	(E) .... Continental Europe
(K)	(EK) .... United Kingdom.
(K)	(XL) .... Australia.
(K)	(EG) ... F.R. Germany.
(K)	(EB) .... Belgium.
(K)	(EH) .... Holland.
(K)	(EF) .... France.
(K)	(Ei) .... Italy.
(K)	(XA) .... Asia, Latin America, Middle Near East, Africa and Oceania.

SPECIFICATIONS

■ TURNTABLE SECTION

Type: Automatic turntable
Drive method: Belt drive
Motor: DC motor
Drive control method: DC servo control
Turntable platter: Aluminum die-cast
Diameter 300 mm (12")
Turntable speeds: 33-1/3 rpm and 45 rpm
Wow and flutter: 0.045% WRMS ±0.06% weighted zero to peak (IEC 98A weighted)
Rumble: 70 dB DIN-B (IEC 98A weighted)

■ TONEARM SECTION

Type: Static-balanced, straight tonearm
Plug-in-connector cartridge system
Overhang: 25 mm (1")
Effective length: 200 mm (7-7/8")
Tracking error angle: Within 3° 18' at inner groove of 30 cm (12") disc
Within 0° 36' at outer groove of 30 cm (12") disc
Applicable cartridge weight: 6 g

■ CARTRIDGE SECTION

Type: Moving magnet stereo cartridge
Magnet circuit: All laminated core
Frequency response: 10 Hz—30 kHz
Output voltage: 2.5 mV at 1 kHz, 5 cm/s. zero to peak lateral velocity
(7 mV at 1 kHz, 10 cm/s. zero to peak, 45° velocity DIN 45 500)
Channel separation: 22 dB at 1 kHz
Channel balance: Within 2 dB at 1 kHz
Recommended load impedance: 47 kΩ—100 kΩ
Compliance (dynamic): 12×10^{-6} cm/dyne (100 Hz)
Stylus pressure range: 1.25 ±0.25 g
Weight: 6 g (cartridge only)
Replacement stylus: EPS-24CS

■ GENERAL

Power supply: For Continental Europe:
AC 220V, 50/60 Hz
For United Kingdom and Australia: AC 240V, 50/60Hz
For others:
AC 110~127V/220~240V, 50/60Hz
Power consumption: 3 W
Dimensions (W×H×D): 360×83×320 mm
(14-1/4"×3-1/4"×12-1/2")
When dust cover is open.
360×350×320 mm
(14-1/4"×13-25/32"×12-1/2")
Weight: 2.5 kg (5.6 lb)

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

Technics

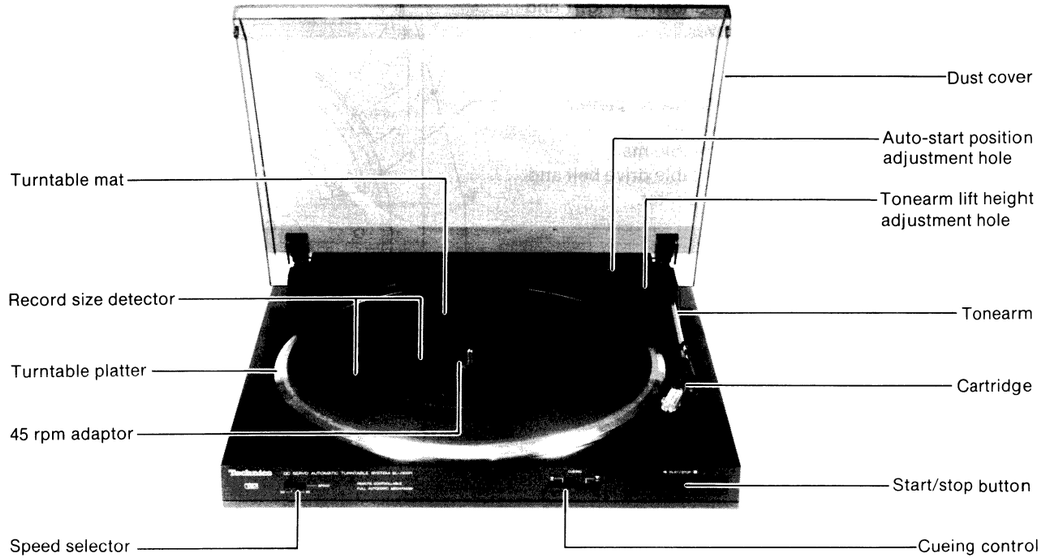
Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

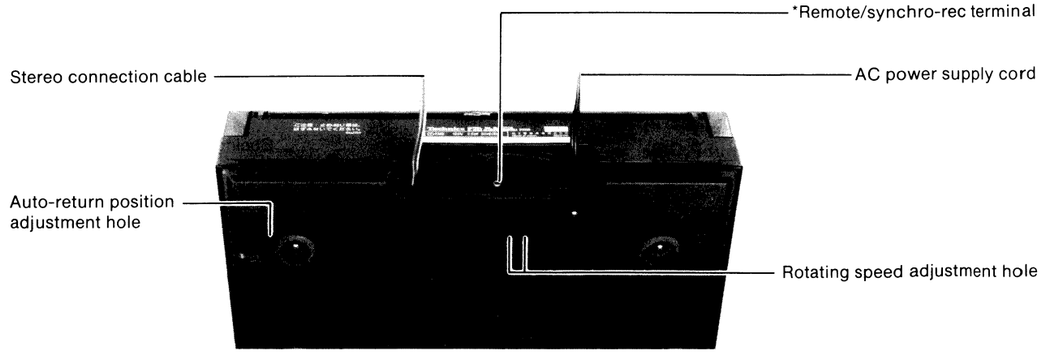
SL-J110R

■ CONTENTS

	Page
LOCATION OF CONTROLS	2
DISASSEMBLY INSTRUCTIONS	3
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM	6
EXPLODED VIEW	7
SCHEMATIC DIAGRAM	9
REPLACEMENT PARTS LIST	11
RESISTORS AND CAPACITORS	12
MEASUREMENT AND ADJUSTMENT	13
PACKING	14

■ LOCATION OF CONTROLS

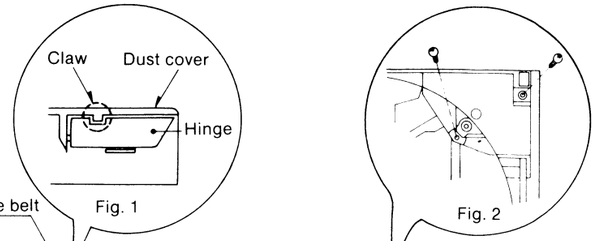




*Remote/synchro-rec terminal .... Synchro recording is possible if a Technics amplifier with "SYNCHRO-REC" or "CONTROL" terminal is connected. Also remote control operation is possible if the amplifier has the remote control functions.
(Refer to the operating instructions of the amplifier and tape deck.)

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the upper side parts
Procedure 1	



① To remove the dust cover
1. Open the dust cover.
2. Hold the hinge shown in Fig. 1 and lift the dust cover.

② To remove the turntable platter
1. Open the dust cover.
2. Remove the turntable mat.
3. Remove the turntable drive belt and lift the turntable platter.

③ To remove the 45 rpm adaptor
1. Remove the turntable platter.
2. Turn the 45 rpm adaptor counter-clockwise.
3. Release the 3 claws.

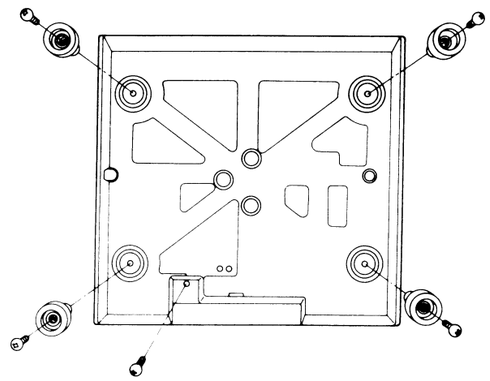
④ To remove the tonearm cover
1. Remove the dust cover and turntable platter.
2. Remove the 2 screws shown in Fig. 2.
3. Lift the tonearm cover.

⑤ To remove the record size detector
1. Remove the turntable platter.
2. Release the 2 claws.

⑥ To remove the cartridge
- Remove the cartridge setscrew and pull out the cartridge.

Ref. No. 2	How to remove the bottom board
Procedure 1-② ➧ 2	

1. Remove the turntable platter.
2. Clamp the tonearm.
3. Turn over the unit on a soft cloth.
4. Remove the 5 screws.



Ref. No. 3	How to remove the lower side parts
Procedure 2 ➧ 3	

To remove the main P.C.B.
1. Set the speed selector to 33 rpm.
2. Remove the 2 screws (❷, ❺).

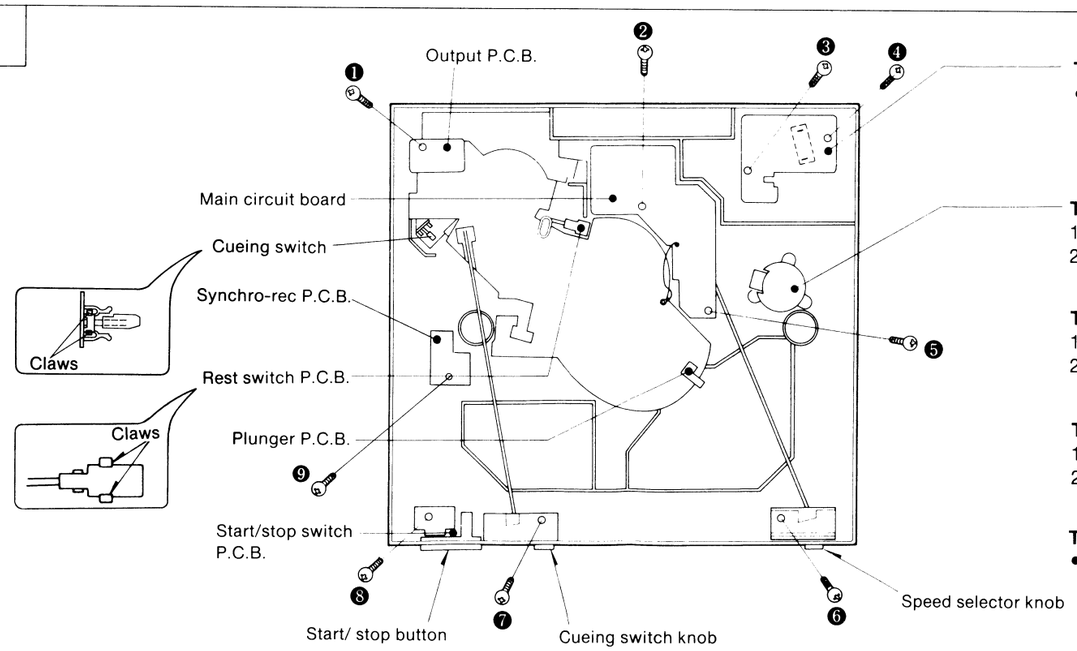
To remove the output P.C.B.
- Remove the screw ❶.

To remove the plunger P.C.B.
- Unsolder the terminals.

To remove the rest and cueing switch P.C.B.
1. Release the 2 claws on both sides.
2. Pull out the rest switch P.C.B.

To remove the synchro-rec P.C.B.
- Remove the screws ❾.

To remove the start/stop switch P.C.B.
- Remove the screw ❽.



To remove the power transformer
- Remove the 2 screws (❸, ❹), and lift the power transformer.

To remove the turntable drive motor
1. Unsolder the 4 lead wires.
2. Lift the turntable drive motor.

To remove the speed selector knob
1. Remove the screw ❻.
2. Remove the rod.

To remove the cueing switch knob
1. Remove the screw ❼.
2. Remove the rod.

To remove the start/stop button
- Remove the screw ❽.

Ref. No. 4	How to remove the tonearm unit
Procedure 2 ♦ 4	

1. Unsolder the 5 arm leads from the output P.C.B. (Fig. 1)
2. Turn over the unit (top side up), and then remove the dust cover and the tonearm cover.
3. Remove the 2 screws shown in Fig. 2.
4. Release the tonearm clamper and move the tonearm toward the center.
5. Lift the tonearm unit.

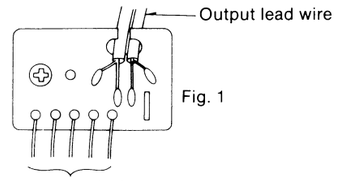


Fig. 1

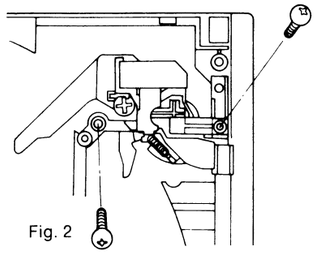


Fig. 2

Ref. No. 5	How to remove the cueing selector
Procedure 4 ♦ 5	

1. Remove the spring.
2. Pull out the rod from the cueing unit.
3. Remove the index plate.
4. Remove the 2 screws.
5. Lift the cueing unit.

* The liftarm can be replaced without removing the cueing unit in the procedure shown in Fig. 2.

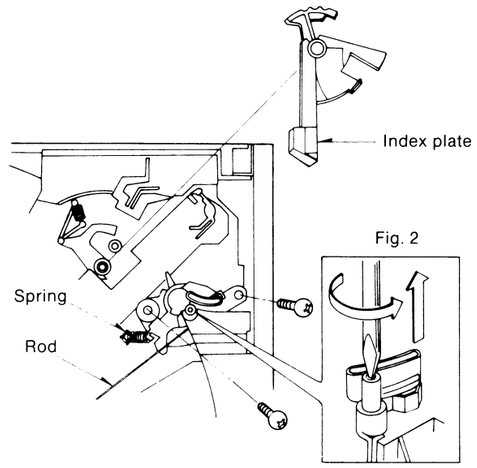


Fig. 2

Ref. No. 6	How to remove the center spindle
Procedure 2 ♦ 6	

1. Remove the ground lead screw. (Fig. 1)
2. Unsolder the 2 terminals of the plunger. (Fig. 1)
3. Turn over the unit (top side up).
4. Release the claw and lift the main gear.
5. Remove the 3 screws.

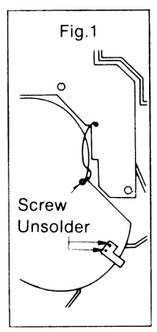
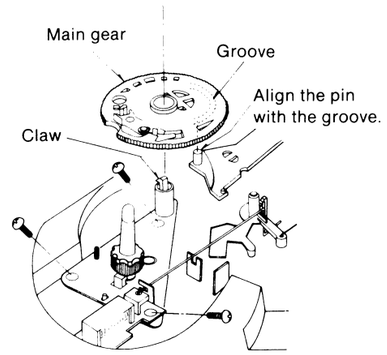
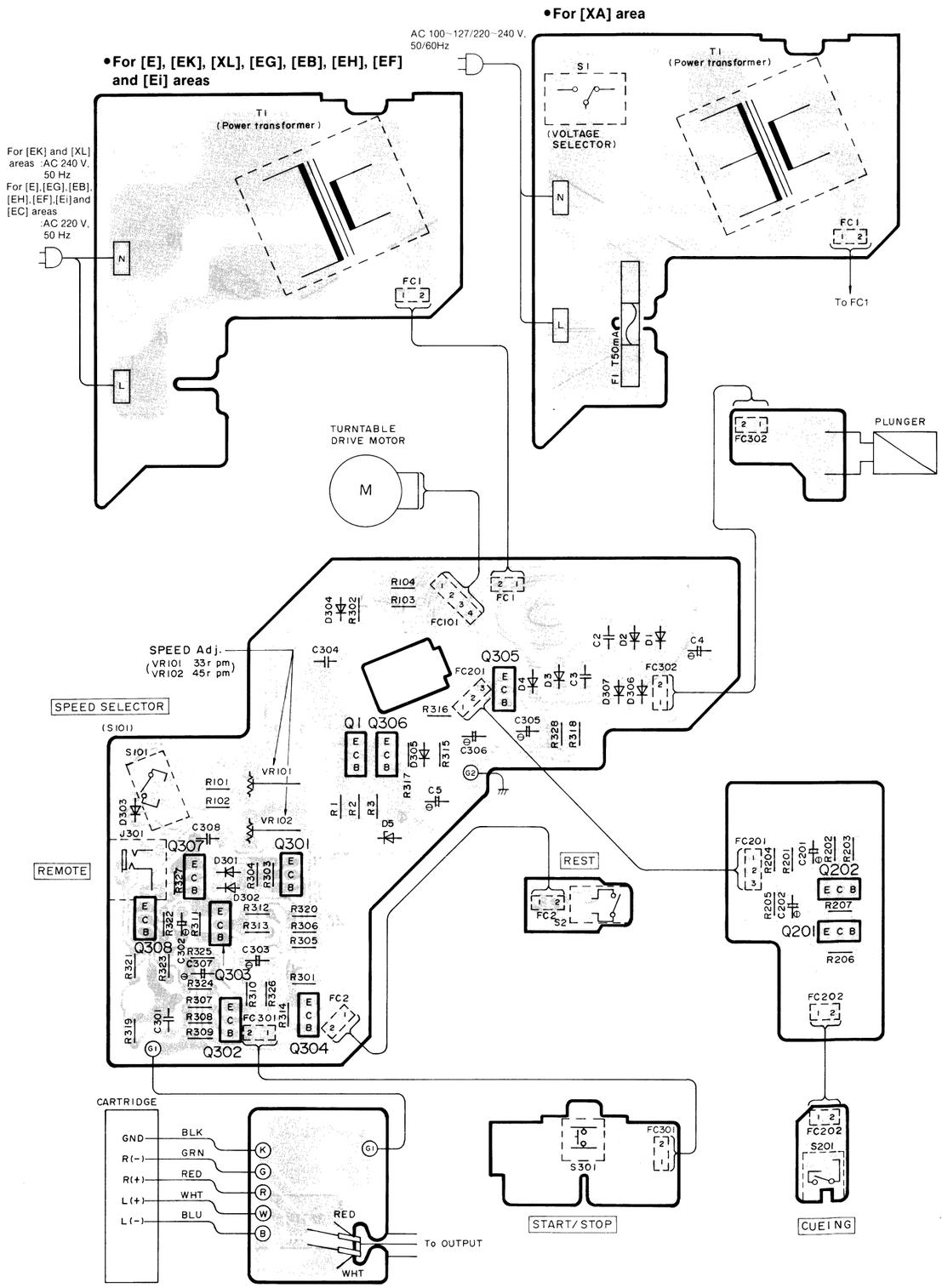


Fig.1

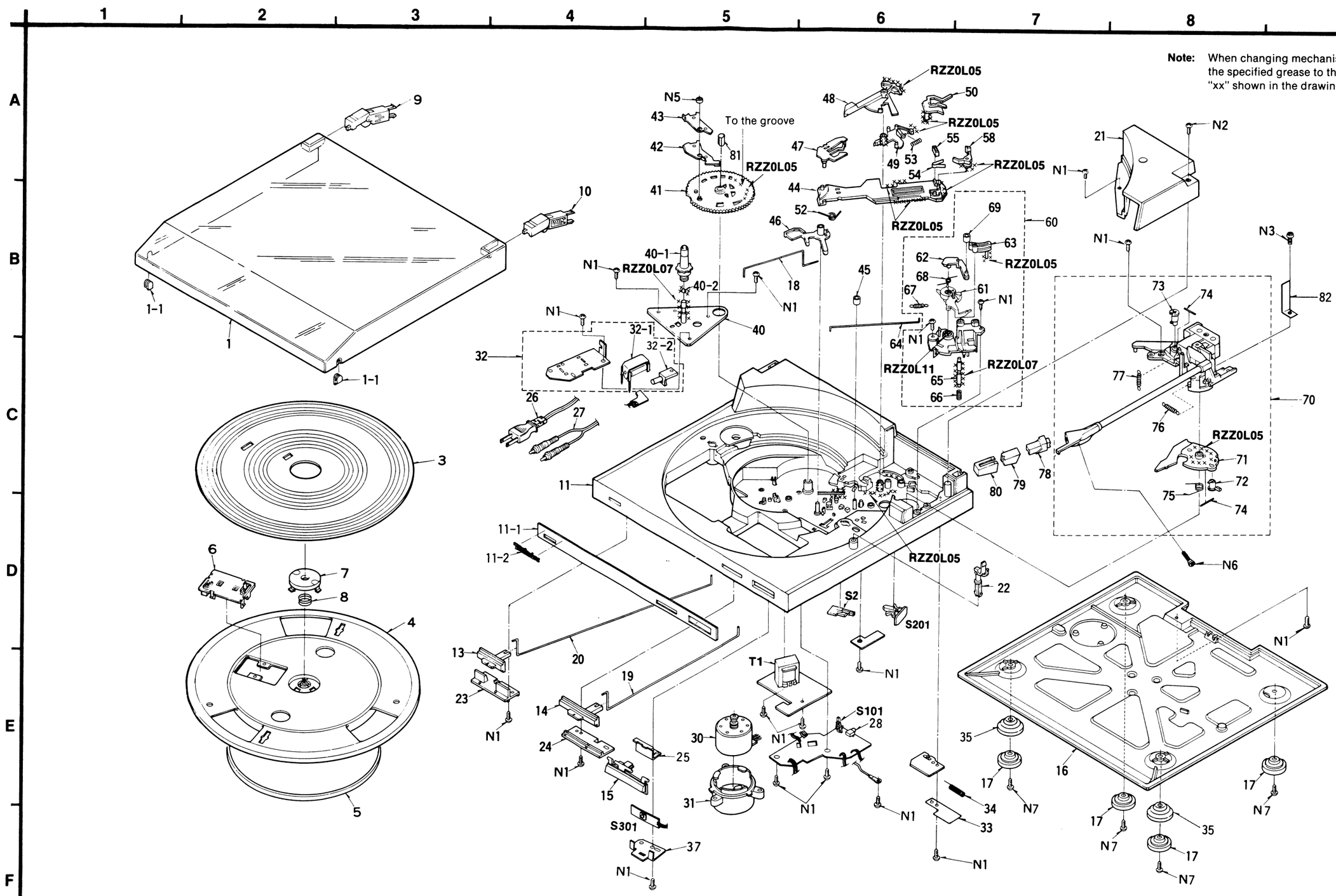


■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



■ EXPLODED VIEW

Note: When changing mechanism parts, apply the specified grease to the areas marked "xx" shown in the drawing.

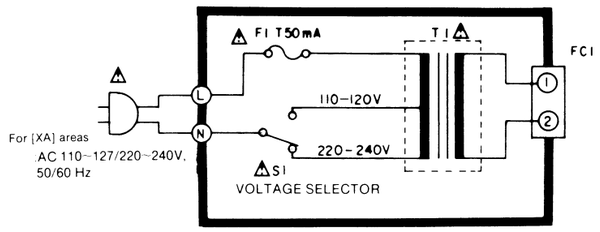


1 ~ 35	1-1 6 1 7 5 8 1-1 9 4 3 23 13 32 11-2 N1 11-1 N1 14 26 24 N1 11 27 20 N1 10 15 N1 19 32-1 32-2 N5 25 31 18 N1 N1 28 N1 N1 17 N1 N1 35 34 33 22 N7 N1 16 21 N1 17 N7 17 35 N7 N2 N6 17 N3 N7 N1	
36 ~ 80	43 42 41 40-1 40-2 37 30 81 40 46 52 47 48 45 49 53 54 62 65 55 50 58 61 69 80 63 79 78 60 77 75 73 76 74 71 72 74 70 82 64 67 68 66	

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

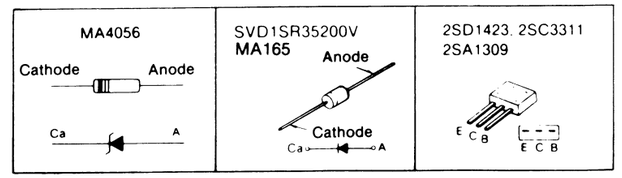
• POWER SOURCE CIRCUIT FOR [XA] AREA

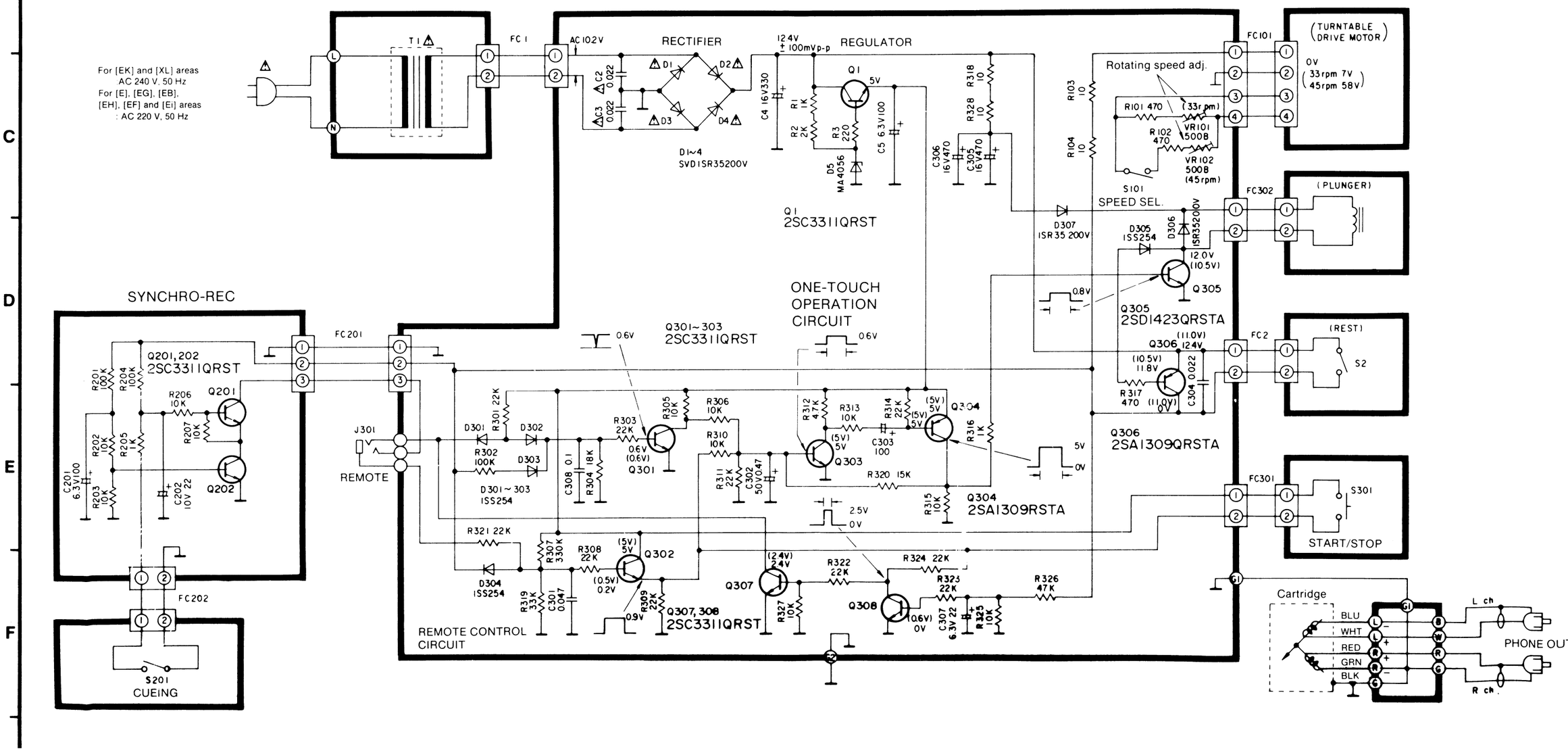


Notes:

1. **S1** : Voltage selector for [XA] area.
2. **S2** : Rest (Power) switch in "OFF" position.
3. **S101** : Speed select switch in "30" position.
4. **S201** : Cueing switch
5. **S301** : Start/stop switch.
6. The values are of the reference voltage of the unit in stop motion measured by a DC voltmeter (high impedance) on the basis of chassis. So some error might be included depending on the internal impedance of the measuring instrument and the unit measured.
   ★ ( ): Voltage in 33 rpm.
7. Waveforms appears when start/stop signals are input.
8. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

• Terminal guide of transistors and diode





■ REPLACEMENT PARTS LIST

Notes : ＊Important safety notice :
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＊Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description
TRANSISTORS		
Q1	2SC3311A-Q	TRANSISTOR
Q201	2SC3311A-Q	TRANSISTOR
Q202	2SC3311A-Q	TRANSISTOR
Q301	2SC3311A-Q	TRANSISTOR
Q302	2SC3311A-Q	TRANSISTOR
Q303	2SC3311A-Q	TRANSISTOR
Q304	2SA1309Q	TRANSISTOR
Q305	2SD1423Q,RS	TRANSISTOR
Q306	2SA1309Q	TRANSISTOR
Q307	2SC3311A-Q	TRANSISTOR
Q308	2SC3311A-Q	TRANSISTOR
DIODES		
D1 ⚠	SVD1SR35200A	RECTIFIER
D2 ⚠	SVD1SR35200A	RECTIFIER
D3 ⚠	SVD1SR35200A	RECTIFIER
D4 ⚠	SVD1SR35200A	RECTIFIER
D5	MA4056-M	DIODE
D301	MA165	DIODE
D302	MA165	DIODE
D303	MA165	DIODE
D304	MA165	DIODE
D305	MA165	DIODE
D306 ⚠	SVD1SR35200A	RECTIFIER
D307 ⚠	SVD1SR35200A	RECTIFIER
VARIABLE RESISTORS		
VR101	EVN61AA00B52	V.R. SPEED SEL (33 rpm)
VR102	EVN61AA00B52	V.R. SPEED SEL (45 rpm)
COILS AND TRANSFORMERS		
T1 ⚠ (EK, XL)	SLTB35F33K	POWER TRANSFORMER
T1 ⚠ (E, EG, EB, EF) (EH, EI)	SLTB35F34K	POWER TRANSFORMER
T1 ⚠ (XA)	SLTB35F35K	POWER TRANSFORMER
FUSES		
F1 ⚠ (XA)	XBA2C005TB0	250V, T50mA
SWITCHES		
S1 (XA)	SFDSHXW02067	SW, VOLTAGE SELECT
S2 ⚠	SSPB4-1	SW,POWER
S101	SSP83	SW,SPEED SELECT
S201	SSP83	SW,CUEING
S301	EVQQS205K	SW,START/STOP

Ref. No.	Part No.	Description
CABINET AND CHASSIS		
1	SGDB90E	DUST COVER
1-1	SHGB5	CUSHION RUBBER
3	SFTGN05N01E	TURNTABLE MAT
4	SD0B3-1	TURNTABLE
5	SJY90080-1	BELT
6	SFUMN05N04E2	SIZE DETECTING PLATE
7	SFWEN05N01	45RPM ADAPTOR
8	SFQAN05N01	SPRING
9	SBHB4E	HINGE
10	SBHB5E	HINGE
11 (E)	SKMLJ110R-KE	CABINET
11 (EB, EH, EF) (EI)	SKMLJ110RKEB	CABINET
11 (EG)	SKMLJ110RKEG	CABINET
11 (EK)	SKMLJ110RKEK	CABINET
11 (XA)	SKMLJ110RKXA	CABINET
11 (XL)	SKMLJ110RKXL	CABINET
11-1	SGXB370-0KB	ORNAMENT
11-2	SGB628-1	BADGE
13	SBCB280-0K	KNOB, SPEED SELECT
14	SBCB280-0K	KNOB, CUEING
15	SBCB260-0K	BUTTON, START/STOP
16	SKUB12-1	BOTTOM BOARD
17	SFGAN05N01	INSULATOR
18	STZB19	ROD
19	STZB15-1	ROD, CUEING
20	STZB16-1	ROD, SPEED SELECT
21	SKMB691-0K	TONEARM COVER
22	SHRB69E-1	TONEARM REST
23	SKMB701	BRACKET(A)
24	SKMB711	BRACKET(B)
25	SKMB721	BRACKET(C)
26 ⚠ (XA)	RJA52Y	POWER CORD
26 ⚠ (XL)	SJAG23	POWER CORD
26 ⚠ (E, EG, EB, EF) (EH, EI)	SJA138-3	POWER CORD
26 ⚠ (EK)	SJA189	POWER CORD
27	SJPB6	OUTPUT CORD
28	SJJ130-3	JACK
30	SMILJ100R-KN	DRIVE MOTOR
31	SHGB1-1	MOTOR COVER
32	RFP14Z	PLUNGER ASS'Y
32-1	1UE0005ZAH	PLUNGER
32-2	SHRLJ100R-KN	PLUNGER CAP
33	SMCB5	SHIELD COVER
34	SUSB56	SPRING
35	SHRB115	PLASTIC SPACER
37	SUWB32	BRACKET
40	SUWB26E	SPINDLE BASE
40-1	SDWB1A	CENTER SPINDLE
40-2	SFYB-5-32	STEEL BALL
MECHANISM PARTS		
41	SDGB10E	MAIN GEAR
42	SFURZ15R51	DRIVE LINK
43	SFURN05N52	FRICTION LINK
44	SHRB74E	DRIVE PLATE
45	SHGB23	CUSHION RUBBER
46	SHRB96	DRIVE LEVER
47	SHRB71	SWITCH LEVER
48	SHRB76-1	INDEX PLATE
49	SHRB73-1	SUB-INDEX PLATE
50	SHRB72-1	SUB-REMOVAL PLATE
52	SUSB49	SPRING
53	SUSB28	SPRING
54	SUSB31	SPRING
55	SFGZB63M51	CUSHION RUBBER
58	SHRB83	PLATE
60	SHRLJ100R-KE	CUEING BASE
61	SHRB108-1	CUEING CAM
62	SHRB78	BRAKE LEVER
63	SFUMN05N60-2	ARM LIFT
64	SUSB46-1	ROD
65	SFXJN05N51	SHAFT
66	SUSB1	SPRING
67	SUSB47-1	SPRING
68	SUSB48	SPRING
69	SHGB19	RUBBER SPACER

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description
TONE ARM		
70	SFAB23A	PICKUP ARM
71	SHRB80-1	HOLDER
72	SHRB79	CAM
73	SFEB12	CAM
74	SUSB44	SPRING
75	SUSB54	SPRING
76	SFQHF01N06	SPRING
78	EPC-P24SAK	CARTRIDGE
79	EPS-24CS	STYLUS
80	SFCNC05101	COVER, STYLUS
81	SHGB34	RUBBER
82	SMCB6E	SHIELD PLATE
SCREWS,WASHERS AND NUTS		
N1	XTV3+10G	SCREW
N2	XTV3+10GFZ	SCREW
N3	XTN3+14G	TAPPING SCREW
N4	XTV3+14G	SCREW
N5	SFUMZ15R61	WASHER
N6	SFPEV0Q601	SCREW
N7	XTV3+10J	SCREW

■ RESISTORS & CAPACITORS

Notes : ＊Important safety notice :
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＊Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)

ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Peculiarity

ECEA	50	M	330
Type	Voltage (50V)	Pecliarity	Value (33μF)

● Capacity are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
● Resistance are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Cip Resistor			
ERJ	: Cip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 % −20
ECQM	: Poyester	50 : 50V	05 : 50V	J : ±5%
ECQP	: Polypropylene	2H : 500V	2A : 100V	G : ±2%
ECG	: Ceramic	1 : 100V	1J : 63V	F : ±1%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		C : ±0.25pF
QCU	: Ceramic (Chip Type)	KC : 125V AC		D : ±0.5pF
ECUX	: Ceramic (Chip Type)	(UL)		
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Value.
RESISTORS(VALUE,WATTAGE)		
R1	ERDS2TJ102	1K 1/4
R2	ERDS2TJ102	1K 1/4
R3	ERDS2TJ221	220 1/4
R101	ERDS2TJ471	470 1/4
R102	ERDS2TJ471	470 1/4
R103	ERDS2TJ100	10 1/4
R104	ERDS2TJ100	10 1/4
R201	ERDS2TJ104	100K 1/4
R202	ERDS2TJ103	10K 1/4
R203	ERDS2TJ153	15K 1/4
R204	ERDS2TJ104	100K 1/4
R205	ERDS2TJ102	1K 1/4
R206	ERDS2TJ103	10K 1/4
R207	ERDS2TJ153	15K 1/4
R301	ERDS2TJ223	22K 1/4
R302	ERDS2TJ104	100K 1/4
R303	ERDS2TJ223	22K 1/4
R304	ERDS2TJ183	18K 1/4
R305	ERDS2TJ103	10K 1/4
R306	ERDS2TJ103	10K 1/4
R307	ERDS2TJ334	330K 1/4
R308	ERDS2TJ223	22K 1/4
R309	ERDS2TJ223	22K 1/4
R310	ERDS2TJ103	10K 1/4
R311	ERDS2TJ223	22K 1/4
R312	ERDS2TJ472	4.7K 1/4
R313	ERDS2TJ103	10K 1/4
R314	ERDS2TJ223	22K 1/4
R315	ERDS2TJ103	10K 1/4
R316	ERDS2TJ102	1K 1/4
R317	ERDS2TJ471	470 1/4
R318	ERDS2TJ100	10 1/4
R319	ERDS2TJ333	33K 1/4
R320	ERDS2TJ153	15K 1/4
R321	ERDS2TJ223	22K 1/4
R322	ERDS2TJ223	22K 1/4
R323	ERDS2TJ223	22K 1/4
R324	ERDS2TJ223	22K 1/4
R325	ERDS2TJ103	10K 1/4
R326	ERDS2TJ473	47K 1/4
R327	ERDS2TJ103	10K 1/4
R328	ERDS2TJ100	10 1/4
CAPACITORS(VALUE,VOLTAGE)		
C2	ECKD1H223PF	0.022 50
C3	ECKD1H223PF	0.022 50
C4	ECEA1CU331	330 16
C5	ECEA0JU101	100 6.3
C201	ECEA0JU101	100 6.3
C202	ECEA1AU220	22 10
C301	ECKD1H473ZV	0.047 50
C302	ECEA1HUR47	0.47 50
C303	ECEA0JU101	100 6.3
C304	ECKD1H223PF	0.022 50
C305 ⚠	ECEA1CU471	470 16
C306 ⚠	ECEA1CU471	470 16
C307	ECEA1AU220	22 10
C308	ECFF1E104ZF	0.1 25

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description
PACKING MATERIAL		
P1 (E, EK, XL, EG) (EB, EH, EI) (XA)	SPGB185	CARTON BOX
P1 (EF)	SBGB186	CARTON BOX
P2	SPSB30-2	PAD(FRONT)
P3	SPSB31-1	PAD(REAR)
P4	SFHKN05N01	CLAMPER
P5	SPEB5	CLAMPER
P6	SFHSN05N01E	SPACER, DUST COVER
P7	SPHB5	PROTECTION SHEET
P8	XZB50X60A01	PROTECTION COVER
P9	SFYF32B35	P-BAG
P10	SFHDC01N01	PAD
P11	SPSB61	PAD(DUST COVER)
P12	SPSB58	PROTECTION SHEET
ACCESSORIES		
A1 (E, EB, EH)	SQXLJ100R-KE	INSTRUCTION MANUAL
A1 (EF, XA)	SQX54662	INSTRUCTION MANUAL
A1 (EI)	SQX54664	INSTRUCTION MANUAL
A1 (EK, XL)	SQX54665	INSTRUCTION MANUAL
A1 (EG)	SQX54666	INSTRUCTION MANUAL
A2 ⚠ (XA)	RJP120ZBS-H	AC PLUG ADAPTOR
A3	SJP2257T	CORD

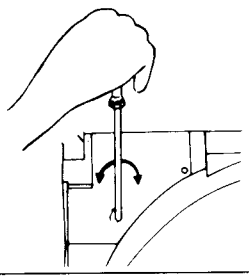
■ MEASUREMENTS AND ADJUSTMENTS

AUTO-START POSITION

1. Clamp tonearm at the rest position. Lightly tap tonearm to make sure it is securely clamped in place.
2. Remove the dust cover.
3. If tonearm sets down outside of record's lead-in groove, turn clockwise (IN). If it sets down to the far inside lead-in groove, turn counterclockwise (OUT).

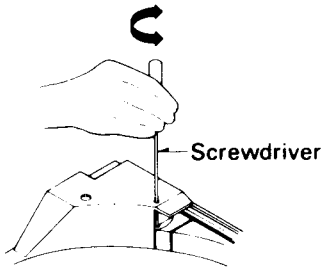
Note: Do not push down very strongly on screwdriver.

4. Replace dust cover.



TONEARM LIFT HEIGHT

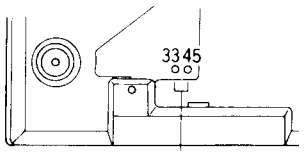
1. Remove the dust cover.
2. Secure the tonearm with arm clamper.
3. Set the cueing control switch to "▼".
4. Put a record on the turntable mat.
5. Shift the arm clamper to set the tonearm free, and adjust the gap between stylus tip and record surface to 4mm~7mm.



ROTATING SPEED

1. Set the speed selector switch to "33".
2. Raise the unit and insert a screwdriver into the adjusting hole (33-rpm) from the back to turn VR101.
3. Set the speed selector switch to "45".
4. Same as in step 2, insert a screwdriver into the adjusting hole (45-rpm) and turn VR102.

Note: The speed adjustment should be done in 33-rpm first.



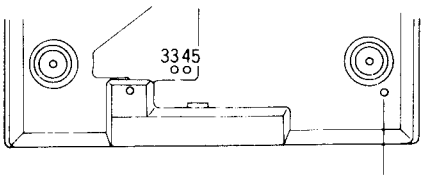
Rotating speed adjustment

AUTO-RETURN POSITION

1. Clamp the tonearm at the rest position.
2. Raise the unit and insert a screwdriver into the adjusting hole from the back to turn the adjustment screw.

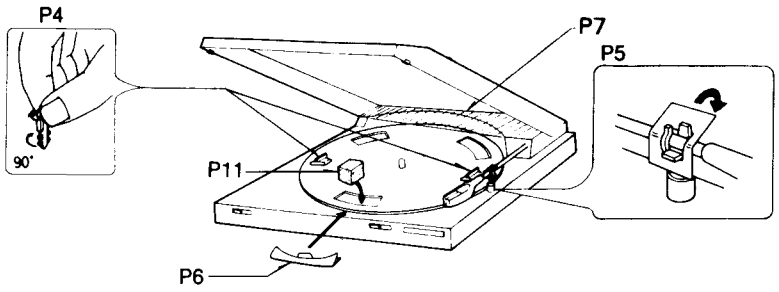
If the tonearm returns before the tune ends.....Turn clockwise.

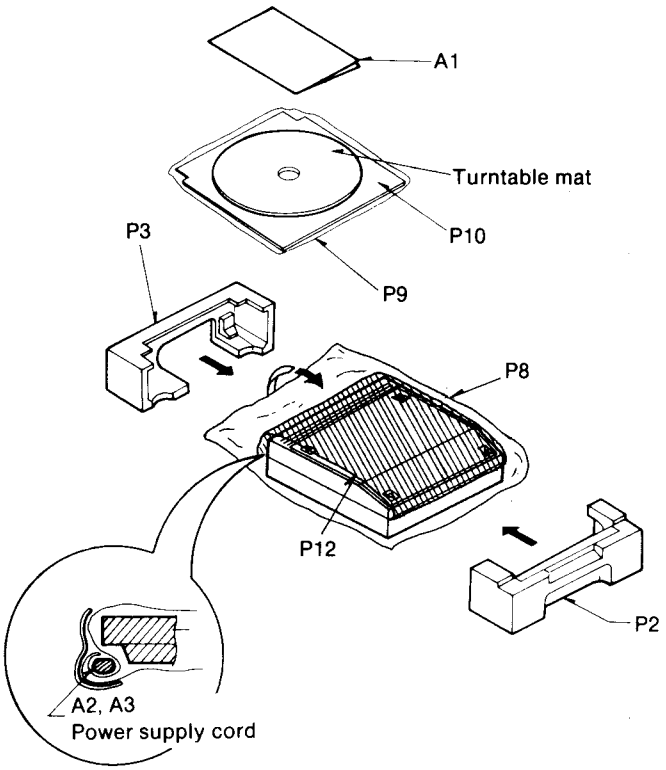
If there is no auto-return.....Turn counterclockwise.



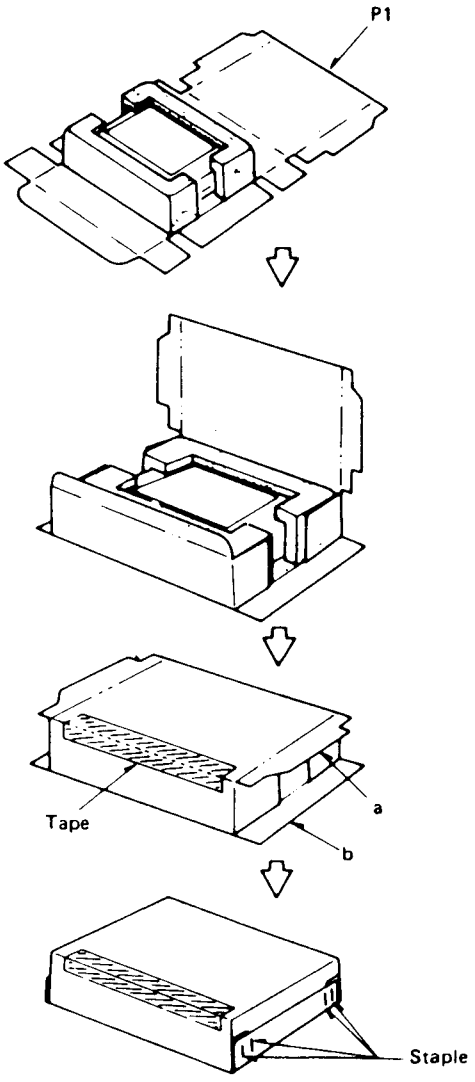
Auto-return position adjustment

■ PACKING

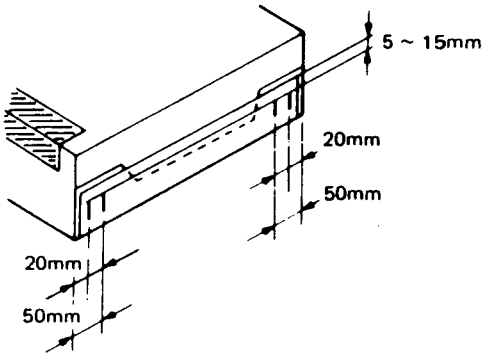




1. Place the unit (with cushions attached) as illustrated.
2. Fold the flaps according to the line marks.
3. Seal the top with adhesive tape.
   *Use gum tape or adhesive cloth tape of 50mm wide at least.
4. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only flap "b". (Use 15 or 16mm staple)



*Stapling positions are shown below.



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